River and station	Flood stage	Above flood stages—dates From—	To—	Crest Stage	Date
ATLANTIC DRAINAGE—continued	*Feet*			*Feet*	
Altamaha:					
Charlotte, Ga.	15	(1)	8	21.2	Apr. 26.
Everett City, Ga.	10	(1)	15	12.5	May 2-4.
Ocmulgee:					
Abbeville, Ga.	11	(1)	4	14.9	Apr. 29.
Lumber City, Ga.	15	(1)	4	17.9	Apr. 25.
EAST GULF DRAINAGE					
Apalachicola:					
River Junction, Fla.	18	(1)	3	26.6	Apr. 27.
Blountstown, Fla.	20	(1)	5	24.6	Apr. 28.
Flint:					
Albany, Ga.	20	(1)	2	29.3	Apr. 24.
Bainbridge, Ga.	25	(1)	4	32.7	Apr. 27.
Alabama: Selma, Ala.	35	(1)	(2)	48.0	Apr. 27.
Etowah: Canton, Ga.	11	24	24	15.6	May 24.
Tombigbee: Lock 4, Demopolis, Ala.	39	(1)	10	61.2	May 1.
Pearl:					
Jackson, Miss.	20	(1)	8	29.8	Apr. 30.
Columbia, Miss.	18	(1)	3	22.9	Apr. 25.
West Pearl: Pearl River, La.	13	(1)	28	16.0	Apr. 28.
MISSISSIPPI DRAINAGE					
Stony Creek: Johnstown, Pa.	10	(1)	1	13.0	Apr. 30.
Monongahela:					
Lock 7, Greensboro, Pa.	30	1	1	33.3	May 1.
Lock 4, Pa.	31	1	1	32.5	Do.
Youghiogheny: Confluence, Pa.	10	(1)	1	11.0	Apr. 30.
Tippecanoe: Norway, Ind.	6	7	10	6.0	May 7-10
Big Pigeon: Newport, Tenn.	6	8	8	6.8	May 8.
Mississippi:					
Arkansas City, Ark.	48	2	11	49.2	May 6-7.
Vicksburg, Miss.	45	3	18	46.9	May 11.
Natchez, Miss.	46	16	16	46.0	May 16.
Baton Rouge, La.	35	16	16	35.0	Do.
Illinois: Beardstown, Ill.	14	(1)	1	16.0	Apr. 16-18.
St. Francis: St. Francis, Ark.	17	(1)	4	21.2	Apr. 27.
Arkansas: Yancopin, Ark.	29	(1)	18	36.7	May 3-4.
White:					
Georgetown, Ark.	22	(1)	9	28.2	Apr. 28-29.
DeValls Bluff, Ark.	24	(1)	10	27.9	Apr. 30-May 1.
Clarendon, Ark.	30	(1)	8	31.5	May 3.
Black:					
Corning, Ark.	11	(1)	7	13.5	Apr. 24-28.
		26	26	11.2	May 26.
Black Rock, Ark.	14	(1)	9	24.9	Apr. 22.
		23	23	14.3	May 23.
Cache: Patterson, Ark.	9	(1)	3	9.6	Apr. 27-29.
Yazoo: Yazoo City, Miss.	25	11	25	26.0	May 21.
Tallahatchie: Swan Lake, Miss.	25	(1)	19	30.6	May 3-4.
Sulphur: Ringo Crossing, Tex.	20	17	19	21.4	May 17.
Cypress: Jefferson, Tex.	18	22	24	19.8	May 22.
Atchafalaya: Melville, La.	37	15	19	37.2	May 15-17.
WEST GULF DRAINAGE					
Trinity: Dallas, Tex.	25	18	18	[4] 25.2	May 18.
Rio Grande:					
San Marcial, N. Mex.	3	3	17	4.0	May 5.
		25	25	3.1	May 25.
		28	(2)	3.4	May 31.
Riogrande, Tex.	21	14	14	23.8	May 14.
San Benito, Tex.	23	15	17	23.7	May 16.
Brownsville, Tex.	18	17	17	18.1	May 17.
PACIFIC DRAINAGE					
Colorado:					
Grand Junction, Colo.	11	29	(2)	11.5	May 31.
Parker, Ariz.	7	5	(2)	10.5	May 18, 19, 31.
Colorado, Roaring Fork: Carbondale, Colo.	5	26	(2)	6.1	May. 31.
Eagle: Eagle, Colo.	5	26	(2)	6.0	Do.
Gunnison:					
Sapinero, Colo.	19	29	(2)	20.1	Do.
Delta, Colo.	9	1	14	11.0	May 3.
		23	(2)	11.5	May 31.
Gunnison, North Fork: Paonia, Colo.	9	2	3	9.6	May 2.
		7	12	9.4	May 10.
Green: Elgin, Utah	12	13	17	12.5	May 15.
		28	(2)	13.0	May 31.
Columbia:					
Marcus, Wash.	24	17	(2)	34.2	May 30-31.
Umatilla, Oreg.	25	28	28	25.1	May 28.
The Dalles, Oreg.	40	27	(2)	42.1	May 29.
Vancouver, Wash.	15	12	(2)	25.4	May 31.
Kootenai: Bonners Ferry, Idaho	26	19	(2)	30.0	May 28.
Pend O'Reille: Newport, Wash.	16	17	(2)	24.0	May 31.
Clearwater: Kamiah, Idaho	14	8	13	14.9	May 9.
		20	27	15.7	May 26.
Willamette: Portland, Oreg.	15	12	(2)	24.4	May 31.

[1] Continued from last month.
[2] Continued at end of month.
[3] Below flood stage at 8 a. m., May 1.
[4] Estimated.

MEAN LAKE LEVELS DURING MAY, 1928

BY UNITED STATES LAKE SURVEY

[Detroit, Mich., June 4, 1928]

The following data are reported in the Notice to Mariners of the above date:

Data	Lakes [1] Superior	Michigan and Huron	Erie	Ontario
Mean level during May, 1928:	*Feet*	*Feet*	*Feet*	*Feet*
Above mean sea level at New York	602.16	579.93	572.07	246.61
Above or below—				
Mean stage of April, 1928	+0.31	+0.42	+0.29	+0.19
Mean stage of May, 1927	+0.28	+0.77	+0.11	+0.66
Average stage for May, last 10 years	+0.57	±0.00	−0.17	+0.42
Highest recorded May stage	−0.89	−3.59	−2.35	−2.34
Lowest recorded May stage	+1.98	+1.77	+0.90	+1.65
Average departure (since 1860) of the May level from the April level	+0.31	+0.30	+0.34	+0.34

[1] Lake St. Clair's level: In May, 1928, 574.55 feet.

EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, MAY, 1928

By J. B. KINEER

General summary.—The first decade of May had more favorable weather than had previously prevailed and farming operations made better advance. Less rainfall in the Southeast promoted better germination and growth, and in the Atlantic area, the Ohio Valley, and the Lake region the warmer weather was welcome and more activity in farm work and crop growth was noted. During the first part of the second decade cool weather retarded germination and growth in most sections east of the Mississippi River, but soil moisture was mostly sufficient. To the westward favorable conditions for agricultural activity and crop growth were experienced, but during the latter part of the period there was a need of moisture reported from parts of the northern Great Plains and the Northwest. During the last decade warmer weather was needed generally over most areas east of the Mississippi River and some parts needed rain, although there was generally ample soil moisture. Over the western two-thirds of the country conditions were generally very favorable in most central and southern sections where there was a fairly good supply of soil moisture, but in northern sections a good, general rain was needed over a large area from the upper Mississippi Valley and northwestern Lake region westward to the Pacific Ocean.

Small grains.—The weather was fairly favorable during the first decade in the eastern winter-wheat belt with some slight advance of the remaining crop, while with the warmer weather there was also some improvement indicated in the upper Mississippi Valley. In the Great Plains and westward to the foothills of the Rocky Mountains timely rains and moderate temperatures were of material benefit. During the second decade there was further generous rain in the Southwest and western portions of the belt and soil moisture was generally ample over most western parts. In the eastern portion there was little change noted. During the last decade the weather continued generally favorable over the western portion and some improvement was noted in

the Ohio Valley, but it was not marked. In the far Northwest the unusually warm, dry weather was detrimental.

The first decade was nearly ideal in the spring-wheat belt and seeding had been nearly completed with favorable conditions for germination, except in some dry areas of South Dakota. The second decade was also mostly favorable for spring wheat, though some poor progress was reported in dry parts of the eastern belt. At the close of the month rain was generally needed throughout the belt, with the effect of the drought beginning to show in some sections, particularly in South Dakota and west-central Minnesota.

Oats were generally backward, but there was some improvement noted. Flax seeding had been retarded by dry soil in some central-northern sections, and growth was slow. Rice was doing well at the end of the month, while grain sorghums were coming up to good stands in the Great Plains.

Corn.—During the first decade corn planting made vigorous advance, under better weather conditions, in the middle Atlantic area and the central valley States. In Iowa progress of seeding was very good with planting ranging from well along to none accomplished. This work made generally good progress during the second decade with most of the crop in the heavy-producing sections, which was in marked contrast to last year. During the last decade corn made very good to excellent progress in the central trans-Mississippi States, where planting had been largely completed, but in the eastern Ohio Valley there was slow germination and growth, due to cool, rainy weather.

Cotton.—During the first decade the weather was rather too cool for best development of the cotton crop. Higher temperatures in the central and eastern portions of the belt were helpful and, for the most part, planting and replanting made good advance in the Carolinas and Georgia. In Texas less rain in the northeast and additional moisture in parts of the south and west made somewhat more favorable conditions, but growth was still slow, due to cool nights, and stands were generally poor to only fair. In Oklahoma the weather favored field operations, but planting progressed slowly in the east because of wet soil and the early seeded was reported as coming up to generally poor stands.

During the second decade better weather for the crop prevailed in most parts. In the Carolinas and Georgia moderate temperatures and showers favored germination of late-planted seed, and progress of the early planted was mostly fair to good. In Alabama and the States bordering on the Mississippi River progress was fair to very good. In Texas advance of early cotton was very good, but it was too wet in the northern portion of the State for favorable germination of late planted; the crop was generally late. In Oklahoma conditions were decidedly less favorable, with poor progress reported and planting and cultivation delayed.

During the last decade the weather was partly favorable. In the eastern half of the belt it was too cool, especially at night, but west of the Mississippi River conditions were generally favorable. In the Atlantic Coast States growth of cotton was slow to only fair, because of prevailing coolness, while in Alabama, Tennessee, and Mississippi warmer weather was needed, but progress was mostly fair. In Arkansas planting had been about completed with progress mostly very good, but in Louisiana advance was only fair. In Oklahoma the warmer, sunny weather made much better conditions and progress was good, chopping advanced, and stands were mostly fair to good. In Texas growth was also mostly good and favorable advance in chopping and cultivation was made.

Miscellaneous.—Meadows and pastures made fair to good progress in the South and East during the month, but slow growth was noted in the Northeast. There were some complaints of lack of moisture in the trans-Mississippi sections, and in the northern Great Plains there was also some unfavorable dryness reported. West of the Rocky Mountains moisture would have benefited rather generally, but in some parts there was excellent advance. Livestock continued to do well.

Potato planting was generally well along in northern sections at the close of the month with the crop doing well in most portions of the South. Truck crops were satisfactory, as a rule, and tobacco setting was well started in Kentucky. Cane made excellent growth in Louisiana and was well cultivated while sugar beet thinning was under way in some western parts. Citrus groves were in good condition in Florida and both citrus and deciduous fruits were doing well in California.

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

The weather conditions over the North Atlantic Ocean during May were in marked contrast to those that prevailed in April, when heavy weather was unusually prevalent. During May, however, the number of days with gales was considerably below the normal over practically the entire ocean. In the 5° square between the thirty-fifth and fortieth parallels and the seventieth and seventy-fifth meridians and that between the fortieth and forty-fifth parallels and the fortieth and forty-fifth meridians gales occurred on four days, while in no other square were they reported on more than three days. Over the greater part of the northern steamer lanes moderate weather was the rule.

Both the Azores HIGH and Icelandic LOW were comparatively inactive during the greater part of the month, with slight pressure gradients between these two centers of action.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian), North Atlantic Ocean, May, 1928*

Stations	Average pressure	Departure [1]	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Julianehaab, Greenland	30.11	([2])	30.42	17th	29.60	8th.
Belle Isle, Newfoundland	30.00	+0.06	30.40	24th	29.64	12th.[3]
Halifax, Nova Scotia	29.97	−0.03	30.18	15th	29.64	25th.
Nantucket	29.92	−0.09	30.30	14th [3]	29.62	25th.
Hatteras	29.92	−0.09	30.44	14th	29.62	24th.
Key West	29.96	−0.02	30.08	14th [3]	29.78	23d.[3]
New Orleans	29.98	+0.02	30.12	4th [3]	29.78	22d.
Cape Gracias, Honduras	29.88	+0.02	29.94	7th [3]	29.82	8th.
Turks Island	30.05	+0.05	30.12	16th [3]	29.92	5th.[3]
Bermuda	30.09	+0.01	30.32	15th	29.84	25th.
Horta, Azores	30.14	−0.11	30.32	19th	29.62	28th.
Lerwick, Shetland Islands	30.03	+0.23	30.40	31st	29.56	15th.
Valencia, Ireland	30.01	+0.06	30.31	13th	29.60	3d.
London	29.93	+0.01	30.28	26th	29.53	16th.[3]

[1] From normals shown on Hydrographic Office Pilot Chart, based on observations at Greenwich mean noon, or 7 a. m. seventy-fifth meridian.
[2] No normal available.
[3] And on other dates.